GRADE AND TONNAGE MODEL OF SIERRAN KUROKO DEPOSITS

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COMMENTS This model applies to the descriptive model for kuroko massive sulfide (No. 28a) by Singer (1986); however, only kuroko deposits of Triassic or Jurassic age in North America were used to construct this subset (table 8). Because many of the deposits lie in the western foothills of the Sierra Nevada in California, the name Sierran kuroko is given to the group. These deposits are significantly smaller in tonnage than the worldwide kuroko group. The reason for this difference is not known. Estimated premining tonnages and grades or total production from the deposits listed below were used to construct the model. Where several different estimates were available for a deposit, the estimated tonnage associated with lowest cutoff grades was used.

The breaks in slopes of the lead, silver, gold, and zinc plots (figs. 16–19) may be related to underreporting of production grades caused by early ore-processing problems. Silver grade is correlated with gold grade (r= 0.76, n=16). See appendix B for locality abbreviations. See introduction for explanation of the grade and tonnage model as shown in figures 14–19.

Table 8. Grades and tonnages of Sierran kuroko deposits

[Tonnages in million metric tons; silver (Ag) and gold (Au) grades in grams per metric ton; other grades in percent. Country and state abbreviations explained in app. B]

Deposit	Country	Tonnage	Cu grade	Zn grade	Pb grade	Ag grade	Au grade
Afterthought	USCA	0.151	3.23	16.15	2.17	190	1
Big Bend	USCA	.05	1.14	10.7	.2	41.4	1.54
Blue Ledge	USCA	.18	4.1	2	0	187	4.3
Blue Moon	USCA	.105	.36	12.5	.45	123	2.09
Bully Hill–Rising Star	USCA	.62	3.8	3.1	0	130	1.98
Copper Crown	CNBC	.211	.31	4.25	0	25	0
Copper Hill	USCA	.266	.43	0	0	0	0
Cronin	CNBC	.054	8.12	7.11	0	431	.34
Double Ed	CNBC	3.63	1	.6	0	0	0
Duthie	CNBC	.118	.4	6.5	2.8	106.5	1.27
George Copper	CNBC	.553	2	0	0	17.2	2.06
Gray Eagle	USCA	1.33	3.8	0	0	17.6	6.17
Greens Creek	USAK	3.629	.5	9	2.5	343	3.4
Keystone-Union	USCA	1.2	2.37	0	0	.75	.01
Mamie	CNBC	.055	.7	7.6	0	0	11
Newton	USCA	.15	3.51	.2	0	13.6	.17
North Keystone	USCA	.205	2.2	0	0	1.3	.02
Penn	USCA	.884	4.24	1.14	.06	75	2.38
Red Wing	CNBC	.181	2	0	0	0	0
Silver Queen	CNBC	.363	.76	6	2.1	275	3.1
Spenceville	USCA	.136	5	0	0	0	0
Sunshine	CNBC	.313	.18	4.8	1.69	12.2	0
Tulsequah	CNBC	1.62	1.27	6.9	1.26	140	4.04

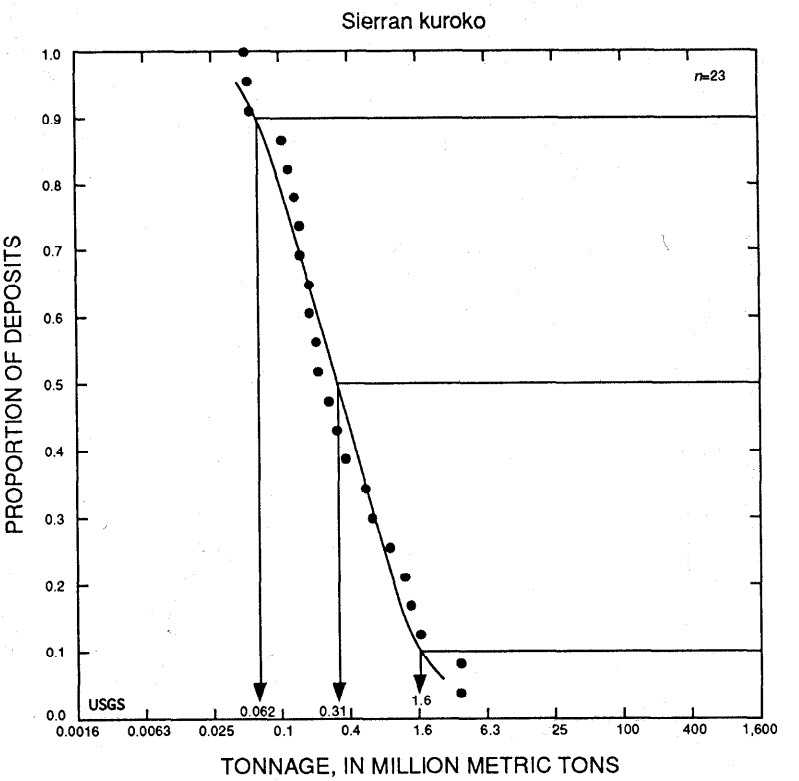

Figure 14. Tonnages of Sierran kuroko deposits.

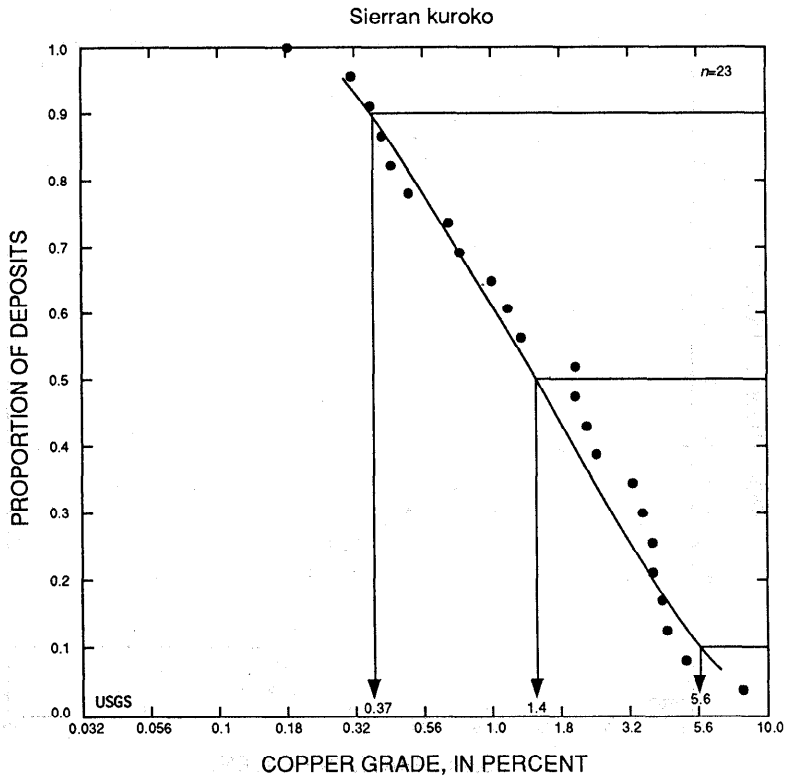

Figure 15. Copper grades of Sierran kuroko deposits.

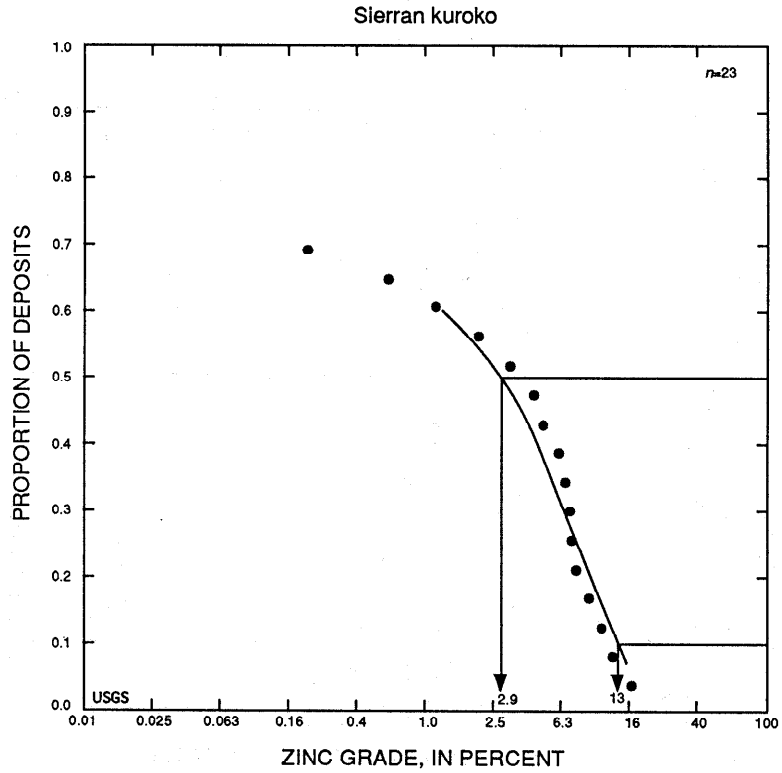

Figure 16. Zinc grades of Sierran kuroko deposits.

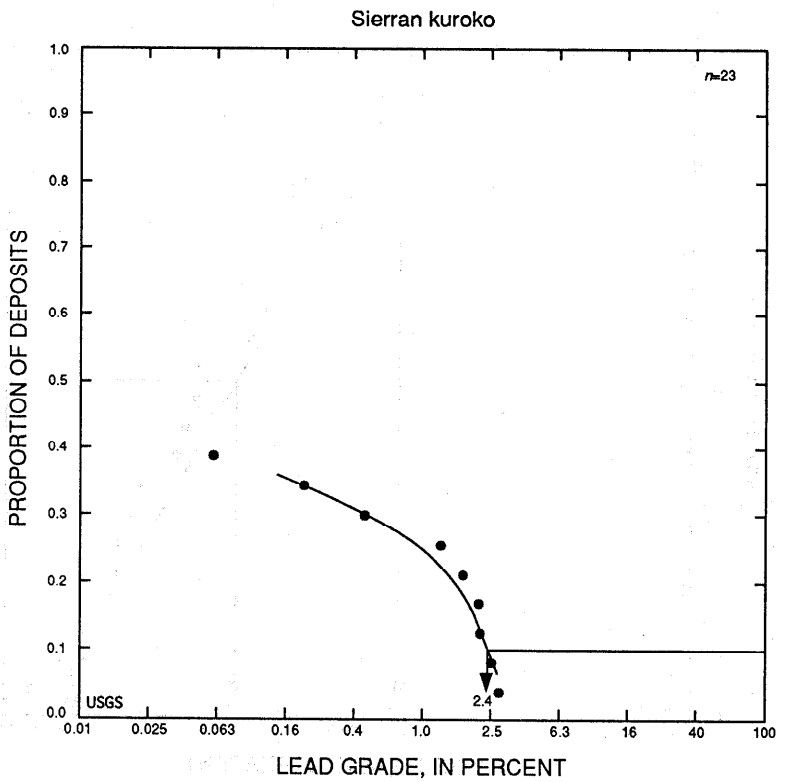

Figure 17. Lead grades of Sierran kuroko deposits.

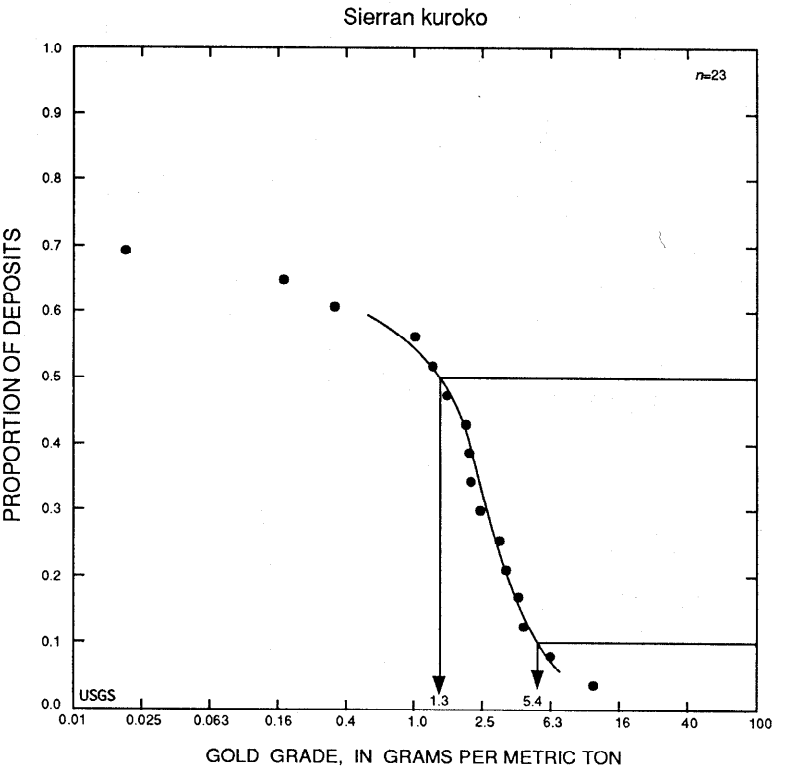

Figure 18. Gold grades of Sierran kuroko deposits. (Gold grade for Keystone-Union not shown.)

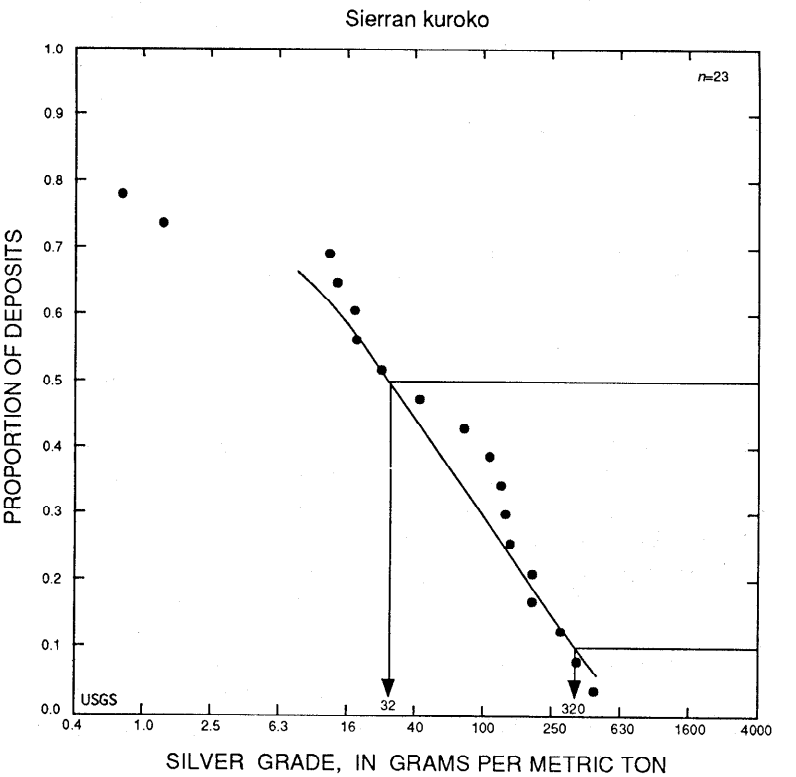

Figure 19. Silver grades of Sierran kuroko deposits.